

ORIGINAL

SUPERIOR COURT OF WASHINGTON FOR KITSAP COUNTY

KITSAP COUNTY ASBESTOS CASES OF )  
SCHROETER, GOLDMARK & BENDER )

NO. 81-2-00940-1

DECLARATION OF MARK GARDNER

My name is Mark Gardner. I am a Legal Assistant at the firm of  
Schroeter, Goldmark & Bender.

Attached as Exhibit "A" to this declaration is a true and correct  
copy of an excerpt out of the magazine The Petroleum Engineer dated  
April 1952. The excerpt contains the article "Hydrous Calcium Silicate  
Heat Insulation" by E.C. Schuman. I obtained these copies from the  
Seattle Public Library on or about April 1982.

Attached as Exhibit "B" to this declaration is a true and correct  
copy of an advertisement taken out of the above mentioned magazine  
on or about the same date. I obtained this copy from the same  
location, the Seattle Public Library.

I certify under penalty of perjury under the laws of the State of  
Washington that the foregoing is true and correct.

DATE: DECEMBER 20, 1983.

PLACE: SEATTLE

  
MARK GARDNER

Attachment 43

Declaration of Mark Gardner

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SCHROETER, GOLDMARK & BENDER, P.S.  
ATTORNEYS AT LAW  
540 CENTRAL BUILDING  
SEATTLE, WASHINGTON 98104  
TELEPHONE (206) 622-8506

EXHIBIT A

# THE Petroleum Engineer

PLAINTIFF'S  
EXHIBIT  
2455

Combined Refining

Drilling and  
Producing

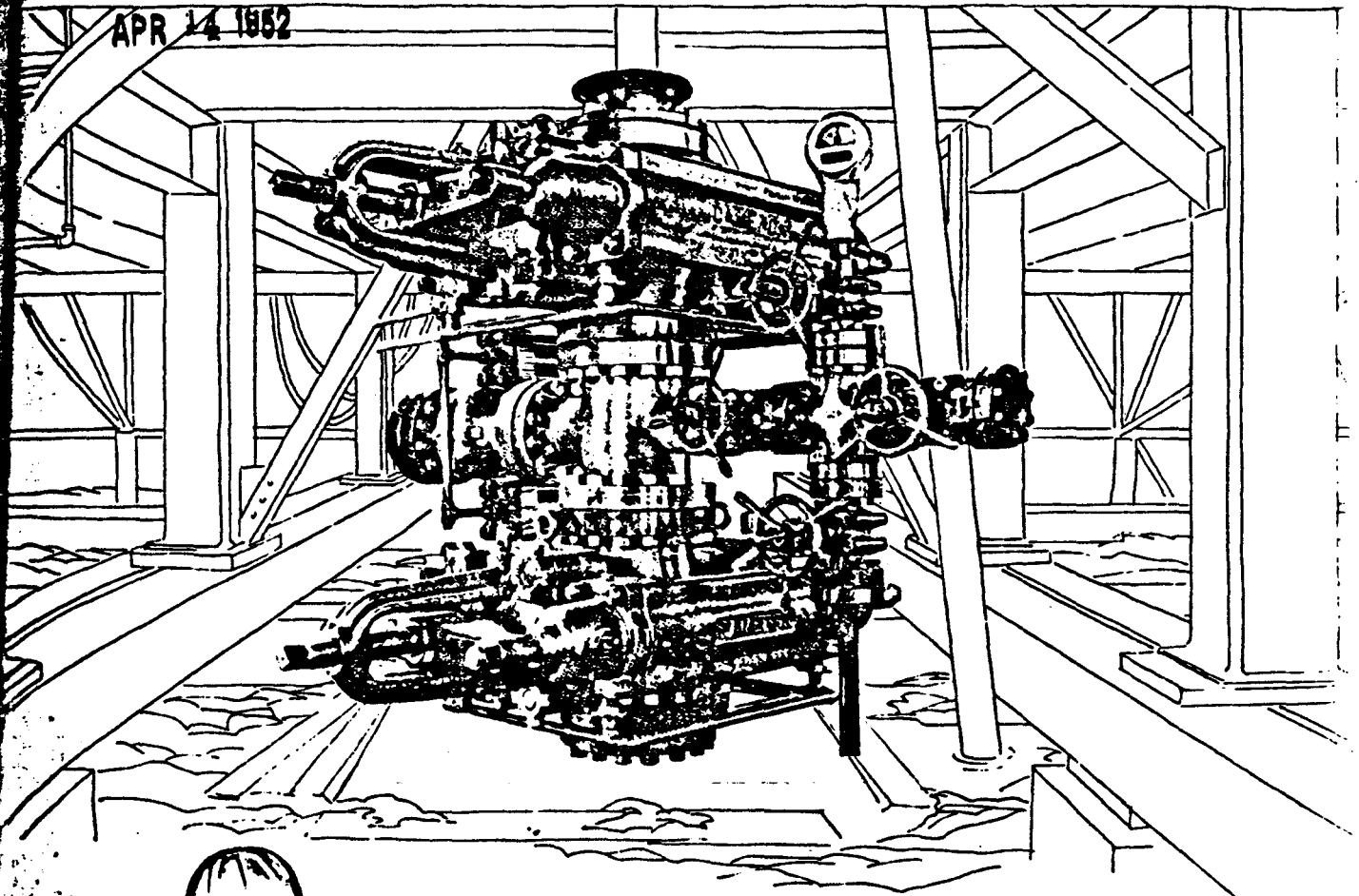
Refining and  
Gas Processing

Oil and Gas  
Pipelining

Seattle Public Library

Technology

APR 14 1962



**"Those Camerons are the best insurance we've got!"**

No other drilling control unit offers so much protection: Swift closure of rams, remote control operating valves within easy reach of the driller, self-feeding ram packing for a positive seal and to permit pipe rotation through closed rams; closing ratio of approximately 8 to 1 (well pressure vs. closing pressure), utilization of well pressure in helping close rams, and quick ram change design which permits changing of largest size rams in a matter of minutes.

Cameron Pressure-Operated Blowout Preventers and Flowline Valves are your best insurance against hazardous well pressures. Before starting a wildcat or a well in a proven high pressure area, be sure your drilling control units are of adequate capacity and modern design . . . be sure they're Camerons!

*Cameron first name in  
drilling control*

CAMERON IRON WORKS, INC. • P. O. BOX 1212 • HOUSTON, TEXAS

Export: 74 Trinity Place, New York, N. Y. Represented in the sterling area by:  
Suojia\_0042 British Oilfield Equipment Co., Ltd., Duke's Court, St. James's, London S.W.1, England

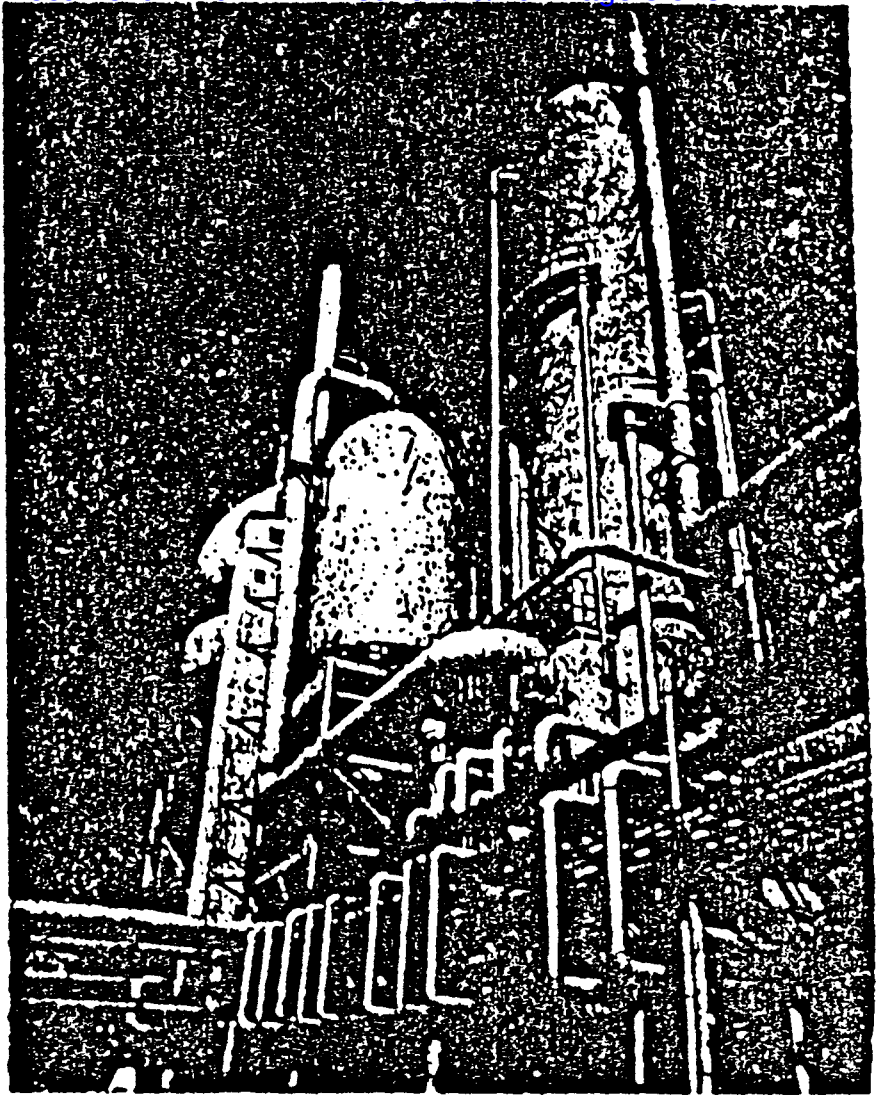


Section of new addition to Port Arthur, Texas, refinery of Gulf Oil Corporation, insulated with hydrous calcium silicate.

**ALWAYS** among the first to recognize and adopt improved materials and methods, the oil industry has quickly accepted a new heat insulation material of the hydrous calcium silicate type. A chemically reacted mixture of lime and silica, containing small amounts of asbestos fiber for hinging action, the new material looks quite similar to other rigid insulating materials commonly used in industry. It is not glass. In outward appearance, its distinguishing characteristics are an almost chalky whiteness and a comparatively smooth surface texture, even when sawed.

Properly made hydrous calcium silicate is different from other insulating materials now on the market because of its unique combination of physical characteristics. Although it has a density of only 11 lb per cubic foot, it has an average flexural strength in excess of 50 psi and a compressive strength of 150 psi. Insolubility in water and incombustibility are two more of its outstanding characteristics. It is effective throughout the entire temperature range from zero to 1200 F. Because its thermal conductivity is conservatively stated at 0.39 at 100 mean or 0.54 at 500 mean temperature, it is frequent practice to specify  $\frac{1}{2}$ -in. less thickness for Kaylo insulation than for "combination" insulating materials in the range from 500 to 1200 surface temperature.

The new material is produced under



P 732.4

## Hydrous Calcium Silicate Heat Insulation

**Extremely light weight—11 lb per cubic foot—makes handling easy;  
Simplified Dimensional Standards facilitates nesting and application**

**E. C. SHUMAN\***

patents numbered Re. 23,228, 2,547,127, and other pending patent applications.

Hydrous calcium silicate insulation has been used principally in the medium and high temperature range, because it is in this range that the material performs to greatest advantage. It may be used also as a low temperature insulation, provided proper vapor seals are employed.

Hydrous calcium silicate insulation products of certain types have been manufactured and sold commercially by

\*Director of research, Kaylo Division, Owens-Illinois Glass Company.

Owens-Illinois Glass Company since 1943. The story of how this company researched and developed the non-glass insulating material is interesting. It is also an inspiring example of the American Way. Without the vision, resources, and technical know-how of "big business," this material would not be on the market today.

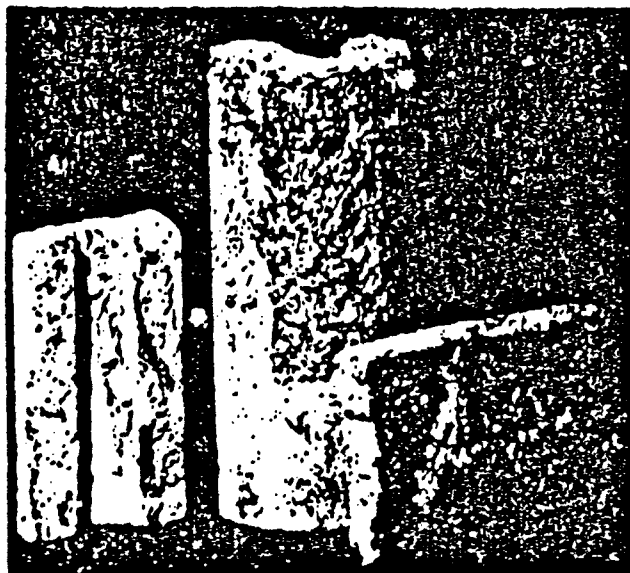
Development of hydrous calcium silicate products began in 1938. The company wanted materials of construction to supplement its Insulux glass

block, already well-established, and it had a great deal of manufacturing and engineering experience with the two principal markets used in hydrous calcium silicates—lime and sand.

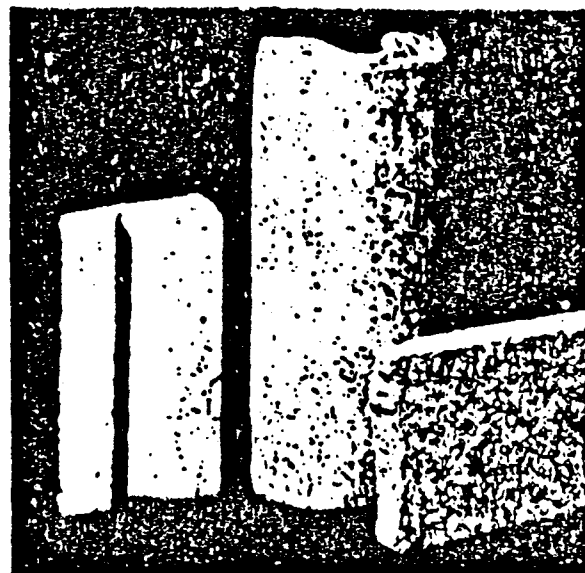
Many other companies and groups have experimented with various hydrous calcium silicate products. Work had been done in Germany in the early 1930's. Several independent research organizations and manufacturing companies in the United States and Canada had attempted to develop commercial materials during this period. One group was able to produce experimentally

EXCLUSIVE  
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Pieces of insulation under water a week, after being pulled out of mud left by Missouri River flood at Kansas City.



Same pieces after being cleaned under a stream of tap water and dried.

result is that insulation made to this system will always nest. Any size or thickness will fit snugly over either a standard pipe or another size or thickness of insulation.

#### Savings by S.D.S. System

The savings anticipated by Thomas in creating the system have proved practical. Because of the interchangeability of insulation made to this system, the number of sizes and thicknesses required to do a given job is greatly reduced. This is particularly beneficial to the user who keeps inventories of material for maintenance. He no longer need keep in stock all sizes and thicknesses that might be required for his insulated equipment. Instead, he can stock only enough sizes and thicknesses to make up the necessary combinations.

If processes are changed after equipment has been insulated, thereby necessitating greater insulation thickness, the user can simply apply another layer to his existing insulation. He need not remove the first insulation and apply a new, thicker covering.

It is worth noting that the 1200 F effective temperature limit of hydrous calcium silicate also applies here. Often insulations must be removed from equipment because new operating temperatures exceed 500 or 600 F limits of the material.

#### Savings In Application

To the engineers who design and specify and to the workmen who apply, the advantages of Kaylo heat insulation products are many, the limitations few.

The "limitations" are tied up with the advantages. One is that the material is so strong and rigid that it cannot be broken and shaped easily around irregular surfaces, a not uncommon practice, though not considered good workmanship. On the other hand, it is this strength combined with light weight that makes it possible to manufacture

and apply the insulation in larger sizes than has been previous practice. This same strength makes it possible for the applicator to cut hydrous calcium silicate insulation to fit irregular surfaces or odd spaces with an ordinary saw, or even with a knife. Applicators who use it learn the new "tricks of the trade" quickly.

Applicators appreciate the fact that hydrous calcium silicate is non-toxic and "easy on the hands."

And this high strength makes it possible to walk on insulated pipes and equipment during installation, and also reduces the amount of insulation breakage during construction. The insulation foreman on a large refinery project in Illinois where this insulation was used throughout, remarked recently that the wasted insulation for the entire job could be hauled away in a pick-up truck. Estimators are learning to use a smaller breakage factor when hydrous calcium silicate is specified.

It is not unusual for applicators to mix crushed magnesite insulation with water to form a paste and force it into small areas to be insulated. Hydrous calcium silicate, being insoluble in water, cannot be used this way. This

same water insolubility, however, makes damage from rain before weathering on outside jobs, and all need for replacing insulation if no water leaks occur in insulated Refining towers, insulated heat exchangers, have withstood rains and high winds without damage.

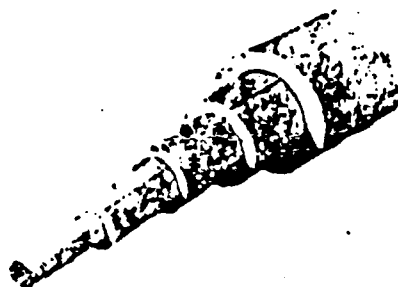
Hydrous calcium silicate insulation applied in the same manner as insulating materials. It is available either with or without canvas cover and can be strapped, wired or nailed to surfaces being insulated. For any type compatible with an adhesive surface can be used. Its nail and holding power are better than available. It has good affinity for insulating finishing cements.

Due to its compatibility with a variety of adhesives, plus the fact that it is in Simplified Dimensional Standard hydrous calcium silicate pipe insulation as well as block may be shipped in order. Shiplapped insulation fits together like shiplapped lumber, giving staggered joints in single layer application. Skilled applicators often their own shiplapping in the field, with a saw or even a chipping hammer.

The variety of forms of heat insulation that can be made in the plant or the field by sawing, drilling, laminating or combinations of them is almost endless. Skillful, conscientious workmen have found numerous shortcuts in these methods. The engineer and estimator need only to decide the most economical for their requirements.

Although a relative newcomer to the field this heat insulation is a promising material in the oil refinery and gas processing field. Among the companies using it for major installations are: Texas, Gulf, Sinclair, Standard of Jersey, Standard of Indiana, Standard of Ohio, Standard of California, Sun Pure Oil, Imperial Oil, Phillips, Cities Service, and Humble.

Telescope of sectional hydrous calcium silicate pipe insulation, illustrating how Simplified Dimensional Standards allows nesting.



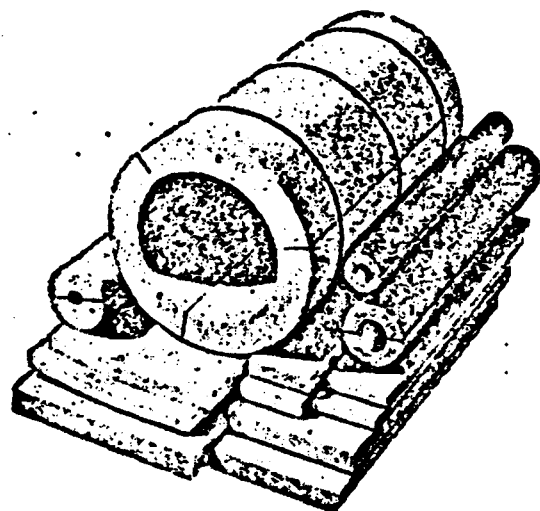
EXHIBIT

# Does Your Present Heat Insulation Have All These Advantages?

PLAINTIFF'S  
EXHIBIT

2456

Kaylo Heat Insulation is a hydrous calcium silicate — a revolutionary heat-saving material — outstanding both in performance and ease of application.



KAYLO PIPE INSULATION is made to Simplified Dimensional Standards of thicknesses and diameters for snug nesting, when necessary.

1

**LOW "K" FACTOR**—Billions of sub-microscopic air spaces which compose the structure of Kaylo Heat Insulation give it exceptional insulating value.

2

**TEMPERATURE RANGE UP TO 1200° F.**—Kaylo Heat Insulation eliminates the need for combination coverings in nearly all operating conditions.

3

**LONG SERVICE LIFE**—Kaylo Heat Insulation remains dimensionally stable, strong and efficient over the years—although exposed to temperatures up to 1200°F.

4

**INSOLUBILITY IN WATER**—Even when saturated, Kaylo Heat Insulation retains about 85% of its strength. It returns to its original strength after drying.

5

**HIGH STRENGTH**—Breakage of Kaylo Heat Insulation is almost negligible in shipping and installation—workmen can walk on insulated equipment without causing breakage.

6

**LIGHT WEIGHT**—Since Kaylo Heat Insulation weighs only 11 pounds per cubic foot, it is exceptionally easy to handle and apply.

7

**WIDE RANGE OF SIZES AND SHAPES**—Kaylo Heat Insulation's unmatched selection of sizes and shapes reduces the number of pieces required per job.

8

**EASE OF CUTTING AND FITTING**—Ordinary tools of the trade are used to install Kaylo Heat Insulation. The material is non-irritating to the skin and non-toxic.

For complete details on all of the advantages of Kaylo Heat Insulation, write Dept. N-249, Owens-Illinois Glass Company, Kaylo Division, Toledo 1, Ohio.



## KAYLO ... first in calcium silicate

...pioneered by OWENS ILLINOIS Glass Company

MAIN OFFICE: TOLEDO 1, OHIO—KAYLO SALES OFFICES: ATLANTA • BOSTON • BUFFALO • CHICAGO • CINCINNATI • CLEVELAND  
DETROIT • HOUSTON • MINNEAPOLIS • NEW YORK • OKLAHOMA CITY • PHILADELPHIA • PITTSBURGH • ST. LOUIS • WASHINGTON

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